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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/003,123

11/26/2001

Andrew G. Swales

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6275

7590

07/27/2006

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EXAMINER

LEZAK, ARRIENNE M

ART UNIT

PAPER NUMBER

2143

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/003,123

Applicant(s)

SWALES ET AL.

Examiner

Arrienne M. Lezak

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 11-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 June 2006 has been entered. Examiner notes that Claims 11, 24 & 30 have been amended, and no claims have been cancelled or added. Claims not explicitly addressed herein are found to be addressed within prior Office Action dated 10 February 2006 as reiterated herein below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 11-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,862,391 to Salas in view of US Patent 5,375,070 to Hershey in further view of US Patent 5,757,924 to Friedman.

4. Regarding Claims 11-14, 22-25 & 30, Salas discloses a network communication system, (Abstract; Col. 57, lines 30-67; Cols. 58-62), comprising:

- a master device for exclusively initiating a request message, (Col. 2, lines 3-12);
- an input/output slave device being exclusively responsive, (providing a response message), to the request message header, (per pending Claim 13), exclusively initiated by the master device, (per pending Claim 14), (Col. 2, lines 3-32; Col. 6, lines 21-36; Cols. 23-25 and Col. 26, lines 36-65), (Examiner notes that Salas discloses a configuration functionality wherein it would have been obvious to configure exclusive relationships between network components providing notification for the same as needed. Specifically, Examiner notes that a slave device obviously requires knowledge of its master device, which knowledge would be included within communication parameters set up during configuration);
- an adapter device directly attached to a body of the slave device, the adapter device comprising an interface circuit for transmitting a response message to the master device in response to the request message, the response message correlating to an output received from the slave device, the adapter device configured to directly attach to an in-data port

- and an out-data port of the body of the slave device, (Col. 2, lines 3-32;
Col. 6, lines 21-36; Cols. 23-25 and Col. 26, lines 36-65);
- an Ethernet module wherein the control processing unit is directly
attached to a factory automation unit, (Fig. 2; Fig. 3; Col. 10, lines 15-67;
and Col. 11, lines 1-18); and
- an optimal communication stack protocol utilized to communicate the
request message and the response message between the master and the
adapter devices, (Col. 6, lines 5-45), the optimal protocol comprising:
 - an IP protocol, (Abstract; Fig. 3; and Col. 2, lines 26-32);
 - a TCP protocol, (Abstract; Fig. 3; and Col. 2, lines 26-32); and
 - an application layer MODBUS protocol, (per pending Claims 12 &
25), wherein the building and parsing of the pre-calculated
response message is responsive to a first part, or predetermined
index of the request message, (Abstract; Fig. 3; Col. 2, lines 26-32;
and Col. 26, lines 36-65).

5. As noted herein above, Salas discloses optimizing a MODBUS/TCP/IP stack, (Col. 6, lines 5-45), however, Salas does not specifically disclose or describe optimizing a MODBUS/TCP/IP stack with a "finite state machine" that takes advantage of a priori assumptions, (per pending Claim 24). Hershey discloses the use of finite state machines for performance optimization, (Col. 18, lines 37-48). The motivation to substitute the optimized MODBUS/TCP/IP stack of Salas with the finite state machine of Hershey is to provide an architecture and method for applying a real time feedback

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control to the logical or physical network behavior of a complex data communications network, (Hershey, Col. 3, lines 48-51).

6. Salas in view of Hershey is relied upon for those teachings disclosed herein. Salas discloses the use of TCP protocol; however, Salas does not exclusively utilize the pre-registered TCP port number 502 selected from a plurality of TCP ports, (pending Claims 22 and 30), wherein any message not transmitted via the TCP port number 502 is ignored, (pending Claim 23). Friedman discloses a network device wherein a firewall/router decides whether to pass a packet based on the source and/or destination IP address and the TCP port number, (Friedman - Col. 3, lines 62-67 and Col. 4, line 1), wherein the decision could obviously be based on the use of TCP port number 502.

7. To incorporate the filtering method of Friedman into the Salas apparatus would have been obvious to one of ordinary skill in the art at the time of invention by Applicant as indicated within the teachings of Salas. The motivation to combine is found within the Salas teachings pertaining to a port byte, indicative of which port a gateway message is to be transmitted on, (Salas - Col. 6, lines 26-28). As Salas provides a method for distinguishing transmission by port number, the enumeration of a specific port number, (like 502), would have been obvious, particularly in light of the use of a MODBUS protocol, (as taught by Salas), which obviously utilizes port 502. Thus, Claims 11-14, 22-25 & 30 are found to be unpatentable over the combined teachings of Salas, Hershey & Friedman.

8. Regarding Claims 15, 27 and 28, Salas, Hershey and Friedman are relied upon for those teachings disclosed herein. Salas further discloses a network communication

system comprising a set of predetermined response messages including at least one predetermined response message, each predetermined response message being distinguishable by the first part of the request message wherein the predetermined response message is determined from the content of the first part of the request message and rapidly selected from the optimal communication stack for quickly responding to the request message, (Salas - Col. 6, lines 5-36). Examiner notes that protocols such as MODBUS, TCP/IP and Commnet obviously if not inherently comprise predetermined response messages. Thus, Claims 15, 27 and 28 are found to be unpatentable over the combined teachings of Salas, Hershey & Friedman.

9. Regarding Claims 16-20, Salas, Hershey and Friedman are relied upon for those teachings disclosed herein. Salas further discloses protocols such as MODBUS, TCP/IP, Ethernet and Commnet, which obviously if not inherently comprise predetermined response messages including, an address resolution protocol request message, an Internet control management protocol request message, a TCP connection request message, a TCP disconnect request message or a MODBUS request message as a TCP data frame, (Salas - Col. 6, lines 5-45 and Col. 29, lines 28-43). Thus, Claims 16-20 are found to be unpatentable over the combined teachings of Salas, Hershey & Friedman.

10. Regarding Claims 21, 26 and 29, Salas, Hershey and Friedman are relied upon for those teachings disclosed herein. Salas further discloses a network communication system wherein each device limits its message to a length that is less than both a TCP transaction length and a maximum transmission unit, (Col. 2, lines 20-32 and Col. 6,

lines 5-36). Examiner notes that since Salas uses TCP/IP, the limitation of message length would be obviously if not inherently compatible with the TCP/IP protocol. Thus, Claims 21, 26 and 29 are found to be unpatentable over the combined teachings of Salas, Hershey & Friedman.

Response to Arguments

11. Applicant's arguments filed 15 June 2006, have been fully considered but they are not persuasive. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how reconsideration avoids such references or objections.

12. Regarding Applicant's argument that the combined references do not teach "messages received on a pre-registered TCP port selected from a plurality of TCP ports in the adapter, Examiner respectfully disagrees. Examiner notes that Applicant's specification clearly enumerates exclusive use of registered TCP port number 502 wherein attempted connections on all other ports can be ignored, (Applicant specification p. 8, lines 10-12), and thus, Applicant's newly amended claim language, interpreted in light of the specification, only encompasses that which Applicant has already claimed, (i.e.: exclusive use of TCP port number 502 as a transmission means wherein all other connection attempt requests are ignored). So, the only question

remaining is whether the prior art teaches the use of pre-registered TCP port as selected from a plurality of TCP ports, and Examiner finds that it does.

13. Specifically, Applicant mentions a “plurality of TCP ports”, but defines them no further within the specification, as Applicant’s invention relies on the exclusive use of TCP port number 502. Moreover, a port number is well-known to be a number which enables IP packets to be sent to a particular process on a computer connected to the Internet, wherein some port numbers are permanently assigned, and wherein a total of 65,535 port numbers are available for use with TCP, which 65,535 port numbers clearly reads upon a “plurality of TCP ports”. Additionally, Examiner notes that the specific use of TCP port number 502 is an arbitrary design choice wherein TCP port numbers are like application addresses, wherein every client/server application inherently requires one for communication purposes. Thus, Applicant’s choice of TCP port number 502 is irrelevant because the use of any port number would function in the same manner.

14. In response to applicant's prior argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., “the adapter creating a message that correlates to the output of a slave device”) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Specifically, Applicant argues that the Modbus Concentrator does not create a message wherein the claim language only requires the adapter to have the ability to transmit the information received from the slave device to the master device.

15. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Examiner notes that the combined references clearly and obviously teach all the elements and claim limitation of Applicant's invention rendering the same unpatentable.

16. In response to applicant's prior argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Examiner notes that proper motivation has been clearly enumerated herein above. Additionally, Examiner notes that the protocol disclosed within Salas clearly comprises the elements enumerated by Applicant defining an "optimal" protocol.

17. In response to applicant's prior argument that no evidence exists to show that a modification of the Salas system would continue to function for its intended purpose if modified with the Hershey reference, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the

references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

18. Regarding Applicant's argument that the combined references do not teach the adapter device as claimed, Examiner respectfully disagrees, as noted herein above.

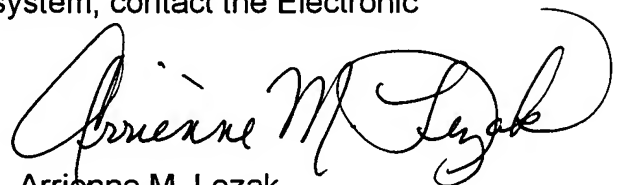
Thus, as Examiner has completely addressed Applicant's amendment, and finding Applicant's arguments do not show how the amendments and reconsideration of the same avoids such references or objections, Examiner hereby rejects all claims in their entirety as noted herein above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arrienne M. Lezak whose telephone number is (571)-272-3916. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571)-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Arrienne M. Lezak", is written over the printed name and title.

Arrienne M. Lezak
Examiner
Art Unit 2143

AML